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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/940,818

08/28/2001

Rene Monshouwer

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12/01/2004

PHILIPS ELECTRONICS NORTH AMERICA CORPORATION  
INTELLECTUAL PROPERTY & STANDARDS  
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SAN JOSE, CA 95131

EXAMINER

STOCK JR, GORDON J

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/940,818

**Applicant(s)**

MONSHOUWER ET AL.

**Examiner**

Gordon J Stock

**Art Unit**

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20020702</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. **Claim 8** is objected to for the following: "the substrate" of lines 8 and 10 lacks antecedent basis. Examiner suggests --the first substrate--. Also "the overlay errors" of line 11 lacks antecedent basis. On line 23 "a substrate overlay mark" should read --the substrate overlay mark--, and on line 24 "a corresponding resist overlay mark" should read --the corresponding resist overlay mark--. Corrections required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1-14** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "substantially larger" in **claims 1 and 8** is a relative term which renders the claims indefinite. The term "substantially larger" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term 'substantially' renders the size of the substrate alignment mark's period indefinite. **Claims 2-7 and 9-14** are rejected for depending upon a rejected base claim.

5. The terms  $p_1$ ,  $p_2$ ,  $p_s$ ,  $p_r$ , and  $p_b$  in **claims 1 and 8** are relative terms which renders the claims indefinite. The terms " $p_1$ ,  $p_2$ ,  $p_s$ ,  $p_r$ , and  $p_b$ " are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of

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ordinary skill in the art would not be reasonably apprised of the scope of the invention. The terms  $p_1$ ,  $p_2$ ,  $p_s$ ,  $p_r$ , and  $p_b$  renders the size of the particular mark's periods indefinite. **Claims 2-7 and 9-14** are rejected for depending upon a rejected base claim.

6. **Claims 1 and 8** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between the specific pitches  $p_1$ ,  $p_2$ ,  $p_s$ ,  $p_r$ , and  $p_b$  and the relationship between the specific marks: resist overlay, substrate overlay, reference mark, and substrate alignment mark. **Claims 2-7 and 9-14** are rejected for depending upon a rejected base claim.

7. In addition, in **claim 1** the terms "adapted to" in line 14 are indefinite, for it is unclear as to how the periods are adapted to respective periods; thereby, the relationship between the periods are indefinite.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. **Claims 1-7** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-4, 6, and 8** of U.S. Patent Application **09/940,819 (Monshouwer et al.)**. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claims 1, 5, and 6** and **claims 1 and 6** of the other application are both methods of measuring alignment or type of alignment, overlay, utilizing the same substrate alignment mark, reference alignment mark, a substrate alignment mark with a specific period and a resist mark with a specific period and measuring/detecting an interference pattern generated by the substrate alignment mark and resist mark which is then imaged onto a reference alignment mark using on-axis principles and an optical filter to select diffraction orders of the radiation. **Claims 2** of both applications relate to the same marks with similar periods being used. **Claims 3** of both applications mention using gratings for the marks. **Claims 4** of both applications mention using latent marks. **Claim 7 and claim 8** of the other application both are methods of alignment involving off axis alignment.

*Allowable Subject Matter*

10. **Claims 1-7** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and if the double patenting rejection is overcome.

**Claims 8-14** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

As to **claim 1**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring the overlay between a resist layer and a substrate using an interference pattern from a substrate overlay mark and a resist overlay mark with a reference mark, in combination with the rest of the limitations of **claims 1-7**.

As to **claim 8**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of manufacturing devices determining the overlay between a resist layer and a substrate using an interference pattern from a substrate overlay mark and a resist overlay mark with a reference mark, in combination with the rest of the limitations of **claims 8-14**.

*Response to Arguments*

11. Applicant's arguments, see Remarks, filed September 15, 2004, with respect to the rejection(s) of **claim(s) 5-7, and 8** under 35 U.S.C. 112 second paragraph; **claim 8** under 35 U.S.C. 102(a) and 102(e); and **claims 1-5, and 7** under 35 U.S.C. 103(a) have been fully considered and are persuasive. In view of the persuasiveness and the amendment to the claims the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made. See 35 U.S.C. 112nd second paragraph and double patenting rejection above.

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***Fax/Telephone Numbers***

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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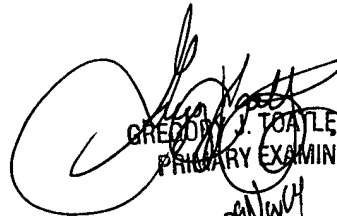
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November 23, 2004

Primary Examiner  
Art Unit 2877

  
GREGORY J. TOATLEY, JR.  
PRIMARY EXAMINER  
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